Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/11/11 has been entered.

DETAILED ACTION

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 5/11/11 and 10/11/11 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

3. Applicant's arguments filed on 5/11/11 have been fully considered but they are not persuasive. The applicant argues that newly added limitation overcomes previous rejections. The examiner respectfully disagrees. First of all, Kuo clearly teaches that the communication path comprising a cable having two substantially parallel separated conductors terminated with a resistance corresponding to a characteristic impedance of the communication path (see figure 1 and item 27, 29 and 42). Furthermore, Kuo teaches that a communication between the multi-turn pickup loop antenna 30 and the cable. Although Kuo is silent about the characteristic impedance relationship between the near filed antenna and the communication path, it is obvious that the cable's impedance is higher than the antenna of the wireless device's impedance (usually it is about 50 ohm). And the cable's impedance could be more than 50ohm. It is most likely that the

impedance of the cable is higher than the impedance of the cable. Thus, it would have been obvious to one of ordinary skill in the art to have such claim such as the design choice.

Claim Objections

4. Claim 1 is objected to because of the following informalities: last second line "new field" should be --near field--. Appropriate correction is required.

5. Claim 18 is objected to because of the following informalities: line 3, typo on "substantiallyu". Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 1-4, 6, 7, 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (U.S. Patent# 4,428,078) in view of Walker et al (US006459363B1, hereinafter Walker).

Per claim 1, Kuo discloses a communication system comprising: a communication path capable of conveying communication signals (see figure 1 and items 27 and 29) the communication path comprising a cable having two substantially parallel separated conductors terminated with a resistance corresponding to a characteristic impedance of the communication path (see figure 1 and item 27, 29 and 42), a plurality of communication devices (seat receivers) adapted to receive or generate VHF or UHF communication signals(see figure 3A, see column 4 and lines 20-23), and a near field antenna (see figure 1 and items 30) associated with the

communication device, the near field antenna being provided sufficiently near to the communication path to couple VHF or UHF communication signals to the communication device to the communication path (see column 2 and lines 15-39, column 5 and lines 14-18). Kuo teaches that a communication between the multi-turn pickup loop antenna 30 and the cable. Although Kuo is silent about the characteristic impedance relationship between the near filed antenna and the communication path, it is obvious that the cable's impedance is higher than the antenna of the wireless device's impedance (usually it is about 50 ohm). And the cable's impedance could be more than 50ohm. It is most likely that the impedance of the cable is higher than the impedance of the cable. Thus, it would have been obvious to one of ordinary skill in the art to have such claim such as the design choice. Kuo does not teach that the communication path is also receiving the communication signal from the communication device. Walker teaches that the modules are bi-directional communication (see figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Walker with Kuo's system to have a full duplex communication system over transmission lines (see column 4 and lines 62-column 5 and lines 5).

Same arguments apply, *mutatis mutandis*, to claim 18.

Per claim 2, Kuo further teaches that the near field antenna is adapted to limit electromagnetic radiation therefrom (see column 2 and lines 37-39, since Kuo's antenna is receiving only so it would not try to emit signal).

Per claim 3, Kuo further teaches that the communication path is provided in the very near field of the near field antenna (see figure 1).

Per claim 4, Kuo further teaches that the near field antenna includes elongate conductors (see column 6 and lines 25-46), but Kuo is silent about that the antenna provided on a non-conductive planar substrate. The examiner believes having a loop antenna on the non-conductive planar substrate such as a print circuit board is well known in the art. The examiner is taking an "Official Notice" that it is notoriously well known in the art to have the loop antenna printed on the PCB to provide supports for the antenna structurally at least.

Per claim 6, Kuo further teaches that the conductors are separated by an insulting web (see figure 3, area between items 27 and 29).

Per claim 7, Kuo further teaches that the cable comprises a ribbon cable (see figure 1 and items 27, 29 and 42 in which constitutes the ribbon cable).

Per claim 9, Kuo further teaches that the system includes a communication device directly coupled to the communication path (see figure 1 and item 23).

Per claim 10, Kuo further teaches that essentially no power is radiated from the communication path (see column 3 and lines 60-67, characteristic of ribbon cable).

Same arguments apply, *mutatis mutandis*, to claim 17.

Per claim 11, Walker further teaches that the system allows bidirectional communication between the communication device the communication path (see figure 1 and corresponding paragraphs).

Per claim 12, Kuo further teaches that the communication device is moveable along the power supply path and the near field antenna moves with the communication device (see figure 1 and 3A, the seat with its antenna is moveable along the power supply path) and relative to the communication path to allow the communication device to receive or generate VHF or UHF communication signals to or from the communication path.

Per claim 13, Kuo discloses an HID/IPT system comprising: a power supply (see figure 1 and item 23) path adapted to be energized by a power supply to provide an electromagnetic field associated with the power supply path; one or more moveable pick-up devices (audio devices) associated with the power supply path and adapted to receive electrical energy from the electromagnetic field to supply a load (see figure 5 and column 7 and lines 15-37); a communication path capable of conveying communication signals (see figure 1 and items 27 and 29), the communication path comprising a cable having two substantially parallel separated conductors terminated with a resistance corresponding to a characteristic impedance of the communication path (see figure 1 and item 27, 29 and 42), a communication device provided on each of the one or more pick-ups (see figure 1 and items 16, 18, and 20), the plurality of communication devices being adapted to receive or generate VHF or UHF communication

signals; and a coupling unit (near field antenna, item 30) associated with the communication device, the coupling unit being capacitively coupled to the communication path to couple VHF or UHF communication signals to or from the communication device to the communication path (see column 2 and lines 14-column 3 and lines 25). Kuo teaches that a communication between the multi-turn pickup loop antenna 30 and the cable. Although Kuo is silent about the characteristic impedance relationship between the near filed antenna and the communication path, it is obvious that the cable's impedance is higher than the antenna of the wireless device's impedance (usually it is about 50 ohm). And the cable's impedance could be more than 50ohm. It is most likely that the impedance of the cable is higher than the impedance of the cable. Thus, it would have been obvious to one of ordinary skill in the art to have such claim such as the design choice. Kuo does not teach that the one or more pick-ups may communicate with each other or with a further device and the communication path is also receiving the communication signal from the communication device. Walker teaches that the modules are bi-directional communication (see figure 1) and modules are able to communicate with each other (see figure 1 and item 1 and corresponding paragraphs). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Walker with Kuo's system to have a full duplex communication system over transmission lines (see column 4 and lines 62-column 5 and lines 5).

Per claim 14, Walker further teaches that the further device interfaces with a control system (see figure 1 and item 1).

Per claim 15, Walker further teaches that the further device is directly connected to the communication path (see figure 1).

Per claim 16, Kuo further teaches that the coupling unit comprises a near field antenna (see item 30).

8. Claim 19-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo and Walker and further in view of Simpson et al. (US20030232181A1, hereinafter Simpson).

Per claim 19, Kuo discloses a communication system comprising: a communication path capable of conveying communication signals (see figure 1 and items 27 and 29),), the communication path comprising a cable having two substantially parallel separated conductors terminated with a resistance corresponding to a characteristic impedance of the communication path (see figure 1 and item 27, 29 and 42), a plurality of communication devices adapted to receive or generate VHF or UHF communication signals(see figure 3A, see column 4 and lines 20-23), and a near field antenna (see figure 1 and items 30) associated with the communication device, the near field antenna being provided sufficiently near to the communication path to couple VHF or UHF communication signals to the communication device to the communication path (see column 2 and lines 15-39, column 5 and lines 14-18). Kuo teaches that a communication between the multi-turn pickup loop antenna 30 and the cable. Although Kuo is silent about the characteristic impedance relationship between the near filed antenna and the communication path, it is obvious that the cable's impedance is higher than the antenna of the wireless device's impedance (usually it is about 50 ohm). And the cable's impedance could be

more than 50ohm. It is most likely that the impedance of the cable is higher than the impedance of the cable. Thus, it would have been obvious to one of ordinary skill in the art to have such claim such as the design choice. Kuo does not teach that the communication path is also receiving the communication signal from the communication device. Walker teaches that the modules are bi-directional communication (see figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Walker with Kuo's system to have a full duplex communication system over transmission lines (see column 4 and lines 62-column 5 and lines 5).

Combination of Kuo and Walker does not teach that the near field antenna including a shielding device to limit electromagnetic radiation. Simpson teaches the utilization of shielding device for radio communication device (see figure 1, para. 0004 and abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the references to improve security and reduce interference.

Same arguments apply, *mutatis mutandis*, to claim 35

Per claim 20, Kuo further teaches that the communication path is provided in the very near field of the near field antenna (see figure 1, column 1 and lines 14-25).

Same arguments apply, *mutatis mutandis*, to claim 38

Per claim 21, Kuo further teaches that the near field antenna is inductively coupled to the communication path (see figure 1 and corresponding paragraphs, and column 1 and lines 14-25).

Per claim 22, Kuo further teaches that the near field antenna comprises a partial, single or multiple turn of a conductive material (see figure 1 and item 30).

Per claim 23, Kuo further teaches that the conductive material comprises a thin metal track (see figure 1 and item 30) but Kuo is silent about that the antenna provided on a non-conductive planar substrate. The examiner believes having a loop antenna on the non-conductive planar substrate such as a print circuit board is well known in the art. The examiner is taking an "Official Notice" that it is notoriously well known in the art to have the loop antenna printed on the PCB to provide supports for the antenna structurally at least.

Per claim 24, Kuo further teaches that the various sizes for the antenna (see column 6 and lines 26-46). Based on the teaching Kuo, it would have been obvious t one of ordinary skill in the art to have the conductive material comprises one or more turns being approximately 5 mm to 15 mm in a lateral dimension and approximately 20 mm to 60 mm in a longitudinal dimension to reduce the size of antenna.

Per claim 25, Simpson further teaches that the shielding device comprises a screen, and the screen is provided on one side of a coupling unit and the communication path is provided on an opposite of the coupling unit (see figure 1 and para. 0004).

Per claim 26, Simpson further teaches that the shielding device comprises a screen of a material having a low magnetic permeability, and the screen is provided on a side of the planar

substrate opposite to a side of the substrate on which the metal track is provided (see para. 0017 and 0018, since the purpose of the film or sheet is to eliminate radiation from a source, it would have been obvious to position the sheet or film close and surround the source).

Per claim 27, Kuo further teaches that the communication path is a transmission line comprising a cable having two parallel conductors (see figure 1 and items 27 and 29).

Per claim 28, Kuo further teaches that the conductors are separated by an insulating web (see figure 3 and area between 27 and 29).

Per claim 29, Kuo further teaches that the cable comprises a ribbon cable (see figure 1 and items 27, 29 and 42).

Per claim 30, Kuo further teaches that the communication path is terminated with a resistance corresponding to the characteristic impedance of the path (see figure 1 and item 42).

Per claim 31, Kuo further teaches that the system includes a communication device directly coupled to the communication path (see figure 1 and item 23).

Per claim 32, Kuo further teaches that essentially no power is radiated from the communication path (see column 3 and lines 60-67, characteristic of ribbon cable).

Per claim 33, Walker further teaches that the system allows bidirectional communication between the communication device the communication path (see figure 1 and corresponding paragraphs).

Per claim 34, Kuo further teaches that the communication device is moveable along the power supply path and the near field antenna moves with the communication device (see figure 1 and 3A, the seat with its antenna is moveable along the power supply path) and relative to the communication path to allow the communication device to receive or generate VHF or UHF communication signals to or from the communication path.

Per claim 36, Walker further teaches that the further device interfaces with a control system (see figure 1 and item 1).

Per claim 37, Walker further teaches that the further device (one of the modules) is directly connected to the communication path (see figure 1).

Per claim 38, Kuo further teaches that the coupling unit comprises a near field antenna (see figure 1).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YUWEN PAN whose telephone number is (571)272-7855. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yuwen Pan/
Primary Examiner, Art Unit 2618